

I. Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claim(s) 1 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over SELYUTIN (US 6,120,609 A) in view of ZHAO (US 5,558,717 A-Incorporated into SELYUTIN) further in view of POLLOCK (US 4,726,689 A).

- 1.1. With respect to claim 1, with reference to figures 10-22 of SELYUTIN wherein additional elements are depicted in Fig. 3 and 7-8 of ZHAO, SELYUTIN and ZHAO disclose a casing (SELYUTIN-38/ZHAO-134), having an opening (ZHAO-142), and a process chamber (ZHAO-141), table (SELYUTIN-22/ZHAO-136) in the process chamber (ZHAO-Fig. 1/SELYUTIN-Fig. 10), connecting portion (SELYUTIN-32), moving portion (SELYUTIN-238) connected to said connecting portion (SELYUTIN-32) outside the process chamber (SELYUTIN-Fig. 10/ZHAO-Fig. 3), movable (via ZHAO-247) base (ZHAO-249/unitary with support SELYUTIN-230), supporting the moving portion (SELYUTIN-238) movably (via SELYUTIN-232), by moving (via ZHAO-247) together with the moving portion (SELYUTIN-238) relative to the casing (SELYUTIN-38/ZHAO-134) adjusting support (ZHAO-247) supporting the base (ZHAO-249/SELYUTIN-230) and casing (SELYUTIN-38/ZHAO-134) in a relatively displacing manner capable of holding a clearance between the base and casing constant. SELYUTIN additionally discloses a seal (SELYUTIN-contained in

206) between the casing (SELYUTIN-38) and moving portion (SELYUTIN-238). SELYUTIN fails to disclose a differential pumping seal. POLLOCK teaches a differential pumping seal is known in the art (Col 1. Li. 16 et seq.). It would have been obvious to one of ordinary skill in the art to modify SELYUTIN in view of ZHAO with the differential pumping seal of POLLOCK in order to provide low friction, low particulates, low noise, and high stiffness guidance to a substrate support shaft while maintaining a high differential pressure between the evacuated process chamber and the ambient environment which surrounds it.

2. Claim(s) 2-4, and 6-9 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over SELYUTIN in view of ZHAO in view of POLLOCK and further in view of KOBAYASHI (US 5,073,912 A).

2.1. With respect to claim(s) 2-4, and 6-9, in SELYUTIN and ZHAO the adjusting supports are interposed between the base (ZHAO-249/SELYUTIN-230) and casing (SELYUTIN-38/ZHAO-134). It is well-known in the art, however, that adjusting support mechanisms may be interposed between a surface plate and a table base as demonstrated, for example, by KOBAYASHI. KOBAYASHI discloses a base (1) placed on a surface plate (7) through adjusting support mechanisms (6). It would have been obvious to one having ordinary skill in the art to rearrange the adjusting support mechanisms of SELYUTIN and ZHAO in view of POLLOCK by placing them between a base supporting the casing and a surface plate as suggested by KOBAYASHI in order to accurately position the base relative to a reference surface. SELYUTIN and ZHAO additionally disclose the base (ZHAO-249/SELYUTIN-230)

supported at three points (ZHAO-Fig. 9) by the adjusting support (ZHAO-247), which suppresses relative movement (via nuts) between the casing (SELYUTIN-38/ZHAO-134), and base (ZHAO-249/SELYUTIN-230) absent power, first opening (SELYUTIN-bottom of 38), seal plate (SELYUTIN-204) having a second opening (SELYUTIN-of ring 204) the connecting portion (SELYUTIN-32) extending therethrough, and an O-ring (SELYUTIN-Col. 8 Li. 23-24) between the process chamber casing (SELYUTIN-38/ZHAO-134), and seal plate (SELYUTIN-204) to close the first and second openings. KOBAYASHI additionally demonstrates that it is well-known to provide a fine (3) and coarse (2) adjustment, and an electric drive source in an adjusting support. It would have been obvious to one of ordinary skill in the art to modify SELYUTIN in view of ZHAO in view of POLLOCK with the fine and coarse adjusting portions of KOBAYASHI in order to allow both efficient and accurate positional adjustments.

3. Claim(s) 5 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over SELYUTIN in view of ZHAO in view of POLLOCK and further in view of MCDONALD (US 2,908,472 A)

3.1. With respect to claim 5, SELYUTIN employs a screw drive as opposed to a hydraulic drive. Hydraulic drives are well known in the art, for example, MCDONALD teaches a hydraulic drive source (Fig. 1). It would have been obvious to one of ordinary skill in the art to modify SELYUTIN in view of ZHAO in view of POLLOCK with the hydraulic drive of MCDONALD in order to actuate the adjusting mechanisms.

II. Response to Applicant's Arguments

Applicant's arguments entered 3/13/08 have been fully considered

1. Applicant argues that claim 1, as amended, distinguishes over SELYUTIN in view of ZHAO and further in view of POLLOCK because SELYUTIN in view of ZHAO fails to teach the base movable relative to the casing. This argument is not persuasive. Applicant asserts that the base (249) is fixed to the casing (134) however this statement is in error as demonstrated by Fig. 8 of ZHAO and the corresponding description.

III. Conclusion

1. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).
2. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.
3. The prior art made of record and not relied upon is considered pertinent to Applicant's disclosure.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles N. Greenhut whose telephone number is (571) 272-1517. The examiner can normally be reached on 7:30am - 4:00pm EST.
5. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Saul Rodriguez can be reached at (571) 272-7097. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.
6. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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/C. N. G./

Examiner, Art Unit 3652

/Saúl J. Rodríguez/

Supervisory Patent Examiner, Art Unit 3652